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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/517,445

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Toshihiro Nishii

2004-1930A

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2033 K. STREET, NW

SUITE 800

WASHINGTON, DC 20006

EXAMINER

NGUYEN, DONGHAI D

ART UNIT

PAPER NUMBER

3729

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/517,445 | Applicant(s) NISHII ET AL. | |
| | Examiner DONGHAI D. NGUYEN | Art Unit 3729 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 17-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art in view of US Patent 7,063,768 to Tsujimoto et al.

Regarding claim 17, AAPA discloses a method of manufacturing a circuit forming board, comprising: impregnating an elongated reinforcing member (11) with impregnation material (12), the reinforcing member extending in a first direction (202, see Fig. 6); transferring the reinforcing member in a second direction (201) such that the first direction of the reinforcing member is parallel to the second direction (see Fig. 6), wherein said impregnating of the elongated reinforcing member (11) with impregnation material (12) occurs simultaneously with said transferring of the reinforcing member (11) in the second direction (201, see Fig. 6);

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adhering films (14) directly onto an upper surface and a lower surface, respectively, of the reinforcing member (see Fig. 7) so as to be entirely peelable off of the upper and lower surfaces of the reinforcing member (see Figs. 9C-D); transferring the reinforcing member in a third direction, wherein said adhering of the films (14) directly onto the upper surface and the lower surface, respectively, of the reinforcing member occurs simultaneously with said transferring of the reinforcing member in the third direction (see Fig. 7). AAPA does not disclose the third direction is orthogonal to the first direction of the reinforcing member. Tsujimoto et al teach the step of transferring the reinforcing member (C) in a third direction (top to bottom) orthogonal to the first direction (left to right) of the reinforcing member (C, see Fig. 21) while attaching the films (S1) to reinforcing member (C) for providing good thickness precision (See Col. 19, lines 22-23 or Col. 37, line 34) in the reinforcing member (C). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the AAPA by utilized the transferring the reinforcing member in the third direction orthogonal to the first direction of the reinforcing member as taught by Tsujimoto et al to obtain a circuit board having good thickness precision.

Regarding claim 18, AAPA discloses pressing the films (14) onto the upper surface and the lower surface, respectively, of the reinforcing member with a heated roller (15).

Regarding claim 19, AAPA discloses the reinforcing member (11) comprises woven fabric (see page 1, line 17).

Regarding claim 20, AAPA discloses forming a via-hole (7) in the reinforcing member (13) and the films (14) adhered on the upper surface and the lower surface of the reinforcing member; filling the via-hole with conductive paste (18); peeling off the films from the

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reinforcing member (see Fig. 9D); and heating and pressing metallic foils (19) onto the upper surface and the lower surface, respectively, of the reinforcing member after said peeling off of the films (see Figs. 9C-F).

Regarding claim 22, AAPA discloses the reinforcing member (11) has a side which extends in the first direction (201, see Fig. 6).

Regarding claim 23, AAPA disclose transferring each of a plurality of separate reinforcing member segments (13, see Fig. 6) in the second direction, each of the plurality of reinforcing member segments (13) extending in the first direction; adhering films (14) onto an upper surface and a lower surface, respectively, of each of the plurality of separate reinforcing member segments (13), and transferring each of the plurality of separate reinforcing member segments(13) in the third direction (see Fig. 7 and rejection of claim 17 above).

Regarding claim 24, AAPA discloses adhering continuous films (14) onto the upper surface and the lower surface, respectively, of each of the plurality of separate reinforcing member segments (13, see Fig. 7).

Regarding claim 25, AAPA discloses impregnating a fiber sheet (11) with a resin (12), by squeezing a part of the impregnated resin such that the impregnated resin is in a semi-cured state after said squeezing of the part of the impregnated resin, wherein said squeezing of the part of the impregnated resin occurs simultaneously with said transferring of the reinforcing member in the second direction (see Fig. 6 and page 1, lines 20-22); and cutting the fiber sheet into the plurality of separate reinforcing member segments (13) after the impregnated resin is in the semi-cured state (see Fig. 6).

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Regarding claim 25, AAPA discloses the reinforcing member is a prepreg sheet (13, see Page 1, line 24).

Regarding claims 27 and 28, AAPA discloses the reinforcing member comprises a fiber sheet (see page 1, lines 16-17), and impregnating the fiber sheet (11) with a resin (12), by squeezing a part of the impregnated resin (12, see page 1, line 21), wherein said squeezing of the part of the impregnated resin occurs simultaneously with said transferring of the reinforcing member in the second direction (see Fig. 6), and wherein the impregnated resin is in a semi-cured state after said squeezing of the part of the impregnated resin (see page 1, lines 21-22) and cutting the fiber sheet into a plurality of separate reinforcing members after the impregnated resin is in the semi-cured state (see Fig. 6).

Regarding claim 21, AAPA/Tsujimoto discloses the reinforcing member has a rectangular shape having a long-side direction and a short-side direction, except for the long-side direction is orthogonal to the first direction of the reinforcing member. It would have been an obvious matter of design choice to one having ordinary skill in the art the time the invention was made to choose the long side or short side of the reinforcing member is orthogonal to the first direction, since Applicants have not disclose the specific side of the first sheet is orthogonal to the first direction, solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the first direction as disclosed by AAPA/Tsujimoto et al.

Response to Arguments

4. Applicant's arguments filed June 16, 2008 have been fully considered but they are not persuasive. In response to applicant's arguments against the references individually i.e. "AAPA also does not disclose that the adhering of the films directly onto the upper surface and the lower surface, respectively, of the reinforcing member occurs simultaneously with the transferring of the reinforcing member in the third direction orthogonal to the first direction of the reinforcing member" (see "Remarks" page 7, 1st paragraph) and Tsujimoto et al does not disclose transferring the reinforcing member in a third direction orthogonal to the first direction while simultaneously adhering films directly onto an upper surface and a lower surface, respectively, of the reinforcing member so as to be entirely peelable off the upper and lower surfaces of the reinforcing member" (see "Remarks" page 7, last paragraph), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Tsujimoto et al teach transferring the reinforcing member (C) in a third direction orthogonal to the first direction (see Figs. 21 and 22) for producing a resin sheet with high thickness precision (see Col. 3, lines 3-7); and AAPA discloses simultaneously adhering films directly onto an upper surface and a lower surface, respectively, of the reinforcing member so as to be entirely peelable off the upper and lower surfaces of the reinforcing member (see Fig. 7) for forming a circuit board.

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In response to applicant's argument that Tsujimoto et al teach away from the sheets (S1) being arranged to be entirely peelable off the upper and lower surfaces of the reinforcing member (see "Remarks" page 8, 2nd paragraph). The Examiner disagrees because AAPA already discloses such features and the teaching of Tsujimoto et al (i.e. transferring the reinforcing member (C) in a third direction orthogonal to the first direction as shown in Figs. 21 and 22 for producing a resin sheet with high thickness precision as disclosed in Col. 3, lines 3-7; Col. 19, lines 22-23 or Col. 37, line 34), is in combined with AAPA for obtaining a circuit board having uniformed thickness.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONGHAI D. NGUYEN whose telephone number is (571)272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
August 29, 2008

/Donghai D. Nguyen/
Primary Examiner, Art Unit 3729